

WHAT IS CLAIMED IS:

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1. An image forming apparatus, comprising:
a hardware resource;
a program;
an examining unit that examines said
10 hardware resource;
a configuration unit in which a relation
between said examining unit and said program is
configured; and
an activating unit that activates said
15 program having the relation with said examining unit
based on the examination of said hardware resource.

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2. The image forming apparatus as claimed
in claim 1, wherein said configuration unit
configures a one-to-one relation between said
examining unit and said program.

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3. The image forming apparatus as claimed
in claim 1, wherein said configuration unit
configures a one-to-“n” (n: an integer more than 1)
relation between said examining unit and a plurality
5 of said programs.

10 4. The image forming apparatus as claimed
in claim 1, wherein said configuration unit
configures an “n”-to-one (n: an integer more than 1)
relation between a plurality of said examining units
and said program.

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5. The image forming apparatus as claimed
20 in claim 1, further comprising:
a storage unit in which the result of the
examination is stored;
wherein
said examining unit determines whether the
25 result of the examination that said examining unit is

to perform is stored in said storage unit, and uses, if the result of the examination that said examining unit is to perform is stored in said storage unit, the stored result of the examination.

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6. The image forming apparatus as claimed
10 in claim 1, wherein

 said activating unit activates said examining unit in compliance with the relation configured in said configuration unit.

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7. The image forming apparatus as claimed
in claim 6, wherein said activating unit, after
20 activating said program, terminates said examining unit.

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8. The image forming apparatus as claimed in claim 1, wherein said examining unit determines whether said hardware resource exists, and outputs, in response to a positive determination, a normal value and outputs, in response to a negative determination, an abnormal value as the result of the examination.

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9. The image forming apparatus as claimed in claim 8, wherein said examining unit determines, if a device driver corresponding to said hardware resource can be successfully opened or is already opened, that said hardware resource exists, and determines that said hardware resource does not exist otherwise.

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10. The image forming apparatus as claimed in claim 8, wherein, in response to receipt of the normal value

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output by said examining unit in the determination as to whether said hardware resource exists that operates partially or entirely as one of a printer, a copier, a facsimile machine, and a scanner, said 5 activating unit activates said program corresponding to the one of the printer, the copier, the facsimile machine, and the scanner.

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11. The image forming apparatus as claimed in claim 1, wherein said examining unit determines whether said hardware resource exists, and outputs, 15 in response to a negative determination, a normal value and outputs, in response to a positive determination, an abnormal value as the result of the examination.

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12. The image forming apparatus as claimed in claim 11, wherein 25 in response to receipt of the normal value

output by said examining unit in the determination as to whether a hard disk drive exists, said activating unit mounts a RAM disk in compliance with the relation configured in said configuration unit.

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13. The image forming apparatus as claimed
10 in claim 1, wherein said examining unit determines whether said hardware resource satisfies a predetermined performance requirement, and outputs, in response to a positive determination, a normal value and outputs, in response to a negative determination, an abnormal value as the result of the
15 determination.

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14. The image forming apparatus as claimed
in claim 13, wherein
in response to receipt of the normal value output by said examining unit in the determination as
25 to whether a central processing unit satisfies a

predetermined performance requirement, said activating unit activates said program having the relation with said examining unit, and

in response to receipt of the abnormal

5 value output by said examining unit, said activating unit does not activate said program having the relation with said examining unit.

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15. The image forming apparatus as claimed in claim 13, wherein

said activating unit, in response to
15 receipt of the normal value from said examining unit as the result of a memory check, activates said program related to said examining unit in said configuration unit, and in response to receipt of the abnormal value from said examining unit as the result
20 of the memory check, does not activate said program.

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16. The image forming apparatus as claimed

in claim 13, wherein

5 said configuration unit configures the relation between said examining unit and one of a directory in which said program is located and an upper directory thereof; and

10 said activating unit, in response to receipt of the normal value as a result of the determination, mounts the directory or the upper directory related to said examining unit, and in response to receipt of the abnormal value as the result of the determination, mounts neither the directory nor the upper directory.

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17. The image forming apparatus as claimed in claim 2, wherein

20 said examining unit determines whether a predetermined identifier of said hardware resource satisfies a predetermined condition, outputs a normal value in response to a positive determination, and outputs an abnormal value in response to a negative determination.

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18. The image forming apparatus as claimed in claim 17, wherein

5 said examining unit determines whether an identifier stored in an SD card matches an identifier of a slot to which the SD card is inserted, outputs a normal value in response to a positive determination, and outputs an abnormal value in response to a negative determination.

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19. The image forming apparatus as claimed in claim 17, wherein

15 said activating unit executes said program configured in said configuration unit as related to said examining unit in response to receipt of the normal value from said examining unit as the result of the determination, and does not execute said 20 program configured in said configuration unit as related to said examining unit in response to receipt of the abnormal value from said examining unit as the result of the determination.

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20. The image forming apparatus as claimed
in claim 5, wherein

 said storage unit is a memory region that
 said examining unit can directly access.

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21. The image forming apparatus as claimed
10 in claim 1, wherein

 said activating unit is activated by an
 operating system that is activated after the power of
 the image forming apparatus is turned on.

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22. The image forming apparatus as claimed
in claim 1, wherein said program further comprises:

20 an application program used for image
 forming;

 a control service program that manages said
 hardware resource used for the image forming; and
 an operating system.

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23. A method of activating a program for an image forming apparatus including a hardware resource, wherein the program causes the hardware resource to form an image, comprising the steps of:

5 interpreting a configuration unit in which is configured a relation between the program and an examining unit that examines the hardware resource;

 activating the examining unit based on a result of the interpretation; and

10 activating the program having the relation with the examining unit based on a result of the examination by the examining unit.

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24. A computer program that causes a computer having a hardware resource and a program to function as:

20 an examining unit that examines said hardware resource;

 a configuration unit in which a relation between said examining unit and said program is configured; and

25 an activating unit that activates said

program having the relation with said examining unit based on the examination.

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25. An image forming apparatus, comprising:
a hardware resource;
a program;
10 a configuration unit in which a relation between examining processing and said program is configured; and
an activating unit that performs the examining processing and activates said program
15 having the relation with the examining processing based on the result of the examining processing.

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26. The image forming apparatus as claimed in claim 25, wherein said configuration unit configures a one-to-one relation between the examining processing and said program.

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27. The image forming apparatus as claimed
in claim 25, wherein said configuration unit
configures a one-to-“n” (n: an integer more than 1)
relation between the examining processing and a
5 plurality of said programs.

10 28. The image forming apparatus as claimed
in claim 25, wherein said configuration unit
configures an “n”-to-one (n: an integer more than 1)
relation between the examining processing and said
program.

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29. The image forming apparatus as claimed
20 in claim 25, further comprising:
 a storage unit in which the result of the
 examining processing is stored;
 wherein
 said activating unit determines whether the
25 result of the examining processing that said

activating unit is to perform is stored in said storage unit, and uses, if the result of the examining processing that said activating unit is to perform is stored in said storage unit, the stored 5 result of the examining processing.

10 30. The image forming apparatus as claimed in claim 25, wherein
 said activating unit performs the examining processing in accordance with the relation configured in said configuration unit.

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 31. The image forming apparatus as claimed 20 in claim 30, wherein said activating unit, after activating said program, terminates the examining processing.

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32. The image forming apparatus as claimed in claim 25, wherein

5 said activating unit determines whether said hardware resource exists by performing the examining processing, and acquires, in response to a positive determination, a normal value and acquires, in response to a negative determination, an abnormal value as the result of the examining processing.

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33. The image forming apparatus as claimed in claim 32, wherein

15 if a device driver corresponding to said hardware resource can be successfully opened or is already opened, said activating unit determines as the result of the examining processing that said hardware resource exists and otherwise determines 20 that said hardware resource does not exist.

25 34. The image forming apparatus as claimed

in claim 32, wherein,

in response to acquisition of the normal
value in the determination as to whether said
hardware resource exists that operates partially or
5 entirely as one of a printer, a copier, a facsimile
machine, and a scanner, said activating unit
activates said program corresponding to the one of
the printer, the copier, the facsimile machine, and
the scanner.

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35. The image forming apparatus as claimed
15 in claim 25, wherein said activating unit determines
whether said hardware resource exists by performing
the examining processing, and acquires, in response
to a negative determination, a normal value and
acquires, in response to a positive determination, an
20 abnormal value as the result of the examination.

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36. The image forming apparatus as claimed

in claim 35, wherein

in response to acquisition of the normal
value in the determination as to whether a hard disk
drive exists, said activating unit mounts a RAM disk
5 in accordance with the relation configured in said
configuration unit.

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37. The image forming apparatus as claimed
in claim 25, wherein said activating unit determines
whether said hardware resource satisfies a
predetermined performance requirement by performing
15 the examining processing, and acquires, in response
to a positive determination, a normal value and
acquires, in response to a negative determination, an
abnormal value as the result of the determination.

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38. The image forming apparatus as claimed
in claim 37, wherein
25 in response to acquisition of the normal

value in the determination whether a central processing unit satisfies a predetermined performance requirement, said activating unit activates said program having the relation with the examining processing, and

5 in response to acquisition of the abnormal value, said activating unit does not activate said program having the relation with the examining processing.

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39. The image forming apparatus as claimed
15 in claim 37, wherein

said activating unit, in response to acquisition of the normal value as the result of a memory check, activates said program related to the examining processing designated in said configuration unit, and in response to acquisition of the abnormal value as the result of the memory check, does not 20 activate said program.

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40. The image forming apparatus as claimed in claim 37, wherein

5 said configuration unit configures the relation between the examining processing and one of a directory in which said program is located and an upper directory thereof; and

10 said activating unit, in response to acquisition of the normal value as a result of the determination, mounts the directory or the upper directory related to the examining processing, and in response to acquisition of the abnormal value as the result of the determination, mounts neither the directory nor the upper directory.

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41. The image forming apparatus as claimed in claim 26, wherein

20 said activating unit determines whether a predetermined identifier of said hardware resource satisfies a predetermined condition by performing the examining processing, acquires a normal value in response to a positive determination, and acquires an 25 abnormal value in response to a negative

determination.

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42. The image forming apparatus as claimed
in claim 41, wherein

10 said activating unit determines whether an
identifier stored in an SD card matches an identifier
of a slot to which the SD card is inserted, acquires
a normal value in response to a positive
determination, and acquires an abnormal value in
response to a negative determination.

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43. The image forming apparatus as claimed
in claim 41, wherein

20 said activating unit executes said program
configured in said configuration unit as related to
the examining processing in response to acquisition
of the normal value as the result of the
determination, and does not execute said program
25 configured in said configuration unit as related to

the examining processing in response to acquisition of the abnormal value as the result of the determination.

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44. The image forming apparatus as claimed in claim 29, wherein

10 said storage unit is a memory region that said activating unit can directly access.

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45. The image forming apparatus as claimed in claim 25, wherein

20 said activating unit is activated by an operating system that is activated after the power of the image forming apparatus is turned on.

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46. The image forming apparatus as claimed

in claim 25, wherein said program further comprises:
an application program used for image
forming;
a control service program that manages said
5 hardware resource used for the image forming; and
an operating system.

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47. A method of activating a program for an
image forming apparatus including a hardware resource,
wherein the program causes the hardware resource to
form an image, comprising the steps of:
15 interpreting a configuration unit in which
is configured a relation between the program and
examining processing that examines the hardware
resource;
performing the examining processing based
20 on a result of the interpretation; and
activating the program having the relation
with the examining processing based on a result of
the examination by an activating unit.

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48. A computer program that causes a computer having a hardware resource and a program to function as:

5 a configuration unit in which a relation between examining processing and said program is configured; and

10 an activating unit that performs the examining processing and activates said program having the relation with the examining processing based on the examination.

15 49. An image forming apparatus, comprising:
 a hardware resource;
 a slot that accepts a recording medium in which a program to be mounted and activated is stored; and

20 an activating unit that compares first machine information indicating an apparatus model corresponding to said program with second machine information indicating the apparatus model of the image forming apparatus, and if the first machine information and the second machine information match,

activates the program stored in the recording medium.

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50. The image forming apparatus as claimed
in claim 49, wherein

10 said activating unit reads a configuration
file stored in the recording medium in said slot, and
acquires the first machine information from a mount
point of the program designated in the configuration
file.

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51. The image forming apparatus as claimed
in claim 49, wherein

20 said activating unit acquires the second
machine information by issuing a system call.

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52. The image forming apparatus as claimed

in claim 49, wherein

 said activating unit compares the first
 machine information and the second machine
 information, activates the program stored in the
5 recording medium if said activating unit determines
 that the first machine information and the second
 machine information match, and does not activate the
 program stored in the recording medium if said
 activating unit determines that the first machine
10 information and the second machine information do not
 match.

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53. The image forming apparatus as claimed
in claim 49, wherein

 if said activating unit determines that the
 first machine information and the second machine
20 information match, said activating unit activates the
 program that causes the image forming apparatus to
 function as one or more of a printer, a copier, a
 facsimile machine, and a scanner.

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54. The image forming apparatus as claimed
in claim 49, wherein

5 said activating unit is activated by an
operating system activated in response to turning on
the image forming apparatus.

10 55. The image forming apparatus as claimed
in claim 50, wherein

 said activating unit acquires the first
machine information from a module information file
located in a mount point of the program.

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56. An image forming apparatus, comprising:
20 a hardware resource;
 a slot that accepts a recording medium in
which a program to be mounted and activated is
stored; and
 an activating unit that compares first
25 identification information of a slot into which the

recording medium is to be inserted and second
identification information of a slot into which the
recording medium is actually inserted, and activates
the program stored in the recording medium if said
5 activating unit determines that the first
identification information and the second
identification information match.

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57. The image forming apparatus as claimed
in claim 56, wherein
said activating unit reads a configuration
15 file stored in the recording medium in said slot, and
acquires the first identification information from
the configuration file.

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58. The image forming apparatus as claimed
in claim 56, wherein
said activating unit acquires the second
25 identification information by issuing a system call.

59. The image forming as claimed in claim
56, wherein

5 said activating unit compares the first
identification information and the second
identification information, activates the program
stored in the recording medium if said activating
unit determines that the first identification
information and the second identification information
10 match, and does not activate the program stored in
the recording medium if said activating unit
determines that the first identification information
and the second identification information do not
match.

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60. The image forming apparatus as claimed
20 in claim 57, wherein

if the first identification information is
not contained in the configuration file read from the
recording medium, said activating unit activates the
program to be mounted and activated stored in the
25 recording medium.

61. The image forming apparatus as claimed
in claim 56, wherein

if said activating unit determines that the
5 first identification information and the second
identification information match, said activating
unit activates the program to be mounted and
activated that causes the image forming apparatus to
function as one or more of a printer, a copier, a
10 facsimile machine, and a scanner.

15 62. The image forming apparatus as claimed
in claim 56, wherein

said activating unit is activated by an
operating system activated in response to turning on
the image forming apparatus.

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63. A method of activating a program for an
25 image forming apparatus having a slot into which a

recording medium is inserted, comprising the steps
of:

comparing first machine information
indicating an apparatus model corresponding to a
5 program to be mounted and activated stored in the
recording medium with second machine information
indicating an apparatus model of the image forming
apparatus; and
activating, if a determination is made that
10 the first machine information and the second machine
information match, the program to be mounted and
activated.

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64. A method of activating a program for an
image forming apparatus having a slot into which a
recording medium is inserted, comprising the steps
20 of:

comparing first identification information
of the slot into which the recording medium is to be
inserted with second identification information of
the slot into which the recording medium is actually
25 inserted; and

activating, if a determination is made that the first identification information and the second identification information match, the program to be mounted and activated.

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65. A computer program that causes a
10 computer having a hardware resource and a slot that accepts a recording medium in which a program to be mounted and activated is stored, to function as:

an activating unit that compares first machine information indicating an apparatus model
15 corresponding to said program with second machine information indicating the apparatus model of the image forming apparatus, and if the first machine information and the second machine information match, activates the program stored in the recording medium.

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66. A computer readable recording medium
25 storing the computer program as claimed in claim 65.

67. A computer program that causes a computer having a hardware resource and a slot that accepts a recording medium in which a program to be 5 mounted and activated is stored, to function as:

an activating unit that compares first identification information of a slot into which the recording medium is to be inserted and second identification information of a slot into which the 10 recording medium is actually inserted, and activates the program stored in the recording medium if said activating unit determines that the first identification information and the second identification information match.

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68. A computer readable recording medium 20 storing the computer program as claimed in claim 67.